ABSTRACT

[54]   An effective method for dynamically selecting the number of I, P and B frames during video coding is proposed. Short-term look-ahead analysis of a video sequence yields a variable number of B frames to be coded between any two stored pictures. The first picture of a group of frames (GOF) may be coded as a B picture. Motion speed is calculated for each picture of the GOF with respect to the first picture of the GOF. Subject to exceptions, as long as the subsequent pictures exhibit motion speeds that are similar and motion vector displacements that are co-linear with those of the first picture in the GOF, they may be coded as B pictures. When a picture is encountered having a motion speed that is not the same as that of the first picture in the GOF, the picture may be coded as a P picture. In some embodiments, a sequence of B pictures that terminates in a P picture may be called a "group of frames" (GOF).